

Taxonomic Review of Korean Ceutorhynchinae (Coleoptera, Curculionidae)

I. Subtribes Rhinoncina, Scleropterina, and Amalina

Ki-Jeong HONG, Andrei B. EGOROV¹⁾, and Yong-Jung KWON²⁾

Insect Research Division, National Plant Quarantine Service, Anyang 430-016, Korea

¹⁾Institute of Biology and Pedology, Far Eastern Branch of Russian Academy of Sciences,
RF-690022 Vladivostok, Russia

²⁾College of Agriculture, Kyungbuk National University, Taegu 702-701, Korea

Abstract Sixteen Korean species of the subtribe Rhinoncina, Scleropterina and Amalina belonging to subfamily Ceutorhynchinae (Coleoptera; Curculionidae) are recognized in this study. Of these, *Phytobius quadricornis* (Gyllenhal), *Rutidosoma weisei* Faust, *Scleropteroides hypocrita* (Hustache), *Zacladus radula* Hochhuth, *Wagnerinus costatus* (Hustache) and *Tapinotus sellatus* (Fabricius) are new to Korean fauna. Descriptions and illustrations of male genitalia, head, antennae and legs for new species to Korean fauna are provided.

Key words Ceutorhynchinae, Curculionidae, Coleoptera, Taxonomy, Korea

INTRODUCTION

The subfamily Ceutorhynchinae was established as a tribe Ceuthorrhynchina belonging to the subfamily Rhynchaenides by Thomson (1859). Morimoto (1962c) proposed a diagnostic standard for distinguishing the subfamily Ceutorhynchinae from its allies as follows: metasternum contiguous with the 1st segment of abdomen between hind coxae and metepisterna, metepisterna parallel-sided, tibiae unarmed or each with a small mucro, corbel of tibiae open, claws often appendiculate, and pronotum with ocular lobes, small, oval and convex species.

Since the catalogue of the subfamily Ceutorhynchinae by Dalla Torre and Hustache (1930), most of workers for Palaearctic fauna (Voss, 1958; Morimoto, 1962c; Dieckmann, 1972; Lohse, 1983; Korotyaev, 1980, 1981, 1991, 1994, 1997a, b), for Nearctic fauna (O'Brien and Wibmer, 1982), and for Neotropical fauna (Wibmer and O'Brien, 1986) treated it as a subfamily. On the other hand, Angelov (1979) regarded it as a tribe Ceutorhynchini under the Calandrinae and others (Zherichin and Egorov, 1990; Egorov *et al.*, 1996) divided it as two tribes Ceutorhynchini and Orobini under the Baridinae.

Most of them are highly specialized feeders on higher plants, and are oligophagous weevils that closely

related to the species of a genus or a family plant (Korotyaev, 1991). The biology of the subfamily Ceutorhynchinae has not been much known except a few agricultural pests. For example, several species of genus *Ceutorhynchus* and *Nipporhynchus ibukianus* (Hustache) are known to the agricultural pests which attack the cruciferous plants (Morimoto, 1957; Choi *et al.*, 1990).

After Dalla Torre and Hustache (1930) published the world catalogue of the subfamily Ceutorhynchinae including 891 species, O'Brien and Wibmer (1978) reported 1,041 species belonging to 72 genera in the world. Korotyaev (1991) enumerated over 700 species in the Palaearctic region. Egorov (1976) reported 39 species from Primor'ye of Russia. Korotyaev (1980) listed 365 species from Russia and Mongolia fauna. Hirashima *et al.* (1989) listed 56 species from Japan, and O'Brien and Wibmer (1982) studied 188 species from North America.

Kolbe reported five species of the family Curculionidae, *Eugnathus distinctus* Roelofs, *Piazomias griseistrius* Kolbe, *Episomus turritus* Gyllenhal, *Baris coreana* Kolbe (= *Anthinobaris dispilota* (Solsky)), and *Larinus pollinis* Laicharting for the first time from Korea in 1886, without any species belonging to the subfamily Ceutorhynchinae.

In 1918, Muramatsu had reported a species of Ceutorhynchinae, *Craponius inaequalis* Say, for the first time in Korea as a grape fruit pest. However, he could not make complete morphological description of the species and the voucher specimens of the species have never been confirmed thereafter. No more

Table 1. Historical review of the previous records of the subfamily Ceutorhynchinae in Korea.

Author (year)	No. species added	Species reported	Remarks
Muramatsu (1918)		<i>Craponius inaequalis</i> Say(?)	Distribution uncertain
Haku (1936)	1	<i>Ceutorhynchus asper</i> Roelofs	= <i>Homorosoma asperum</i> (Roelofs)
Lee et Kwon (1974)	2	<i>Rhinoncus jakovlevi</i> Faust <i>Ceutorhynchus ibukianus</i> Hustache	= <i>Nipporhynchus ibukianus</i> (Hustache)
Korotyaev (1981)	1	<i>Cyphosenus grouvellei</i> Hustache	= <i>Augustinus grouvellei</i> (Hustache)
Kwon et Lee (1986)	6	<i>Rhinoncus cribricollis</i> Hustache <i>Rhinoncus perpendicularis</i> (Reich) <i>Rhinoncus sibiricus</i> Faust <i>Craponius bigibbosus</i> Hustache <i>Homorosoma chinense</i> Wagner <i>Ceutorhynchus shaowuensis</i> Voss	= <i>Sinauleutes bigibbosus</i> (Hustache)
Morimoto et Lee (1992)	2	<i>Zacladus fallax</i> (Boheman) <i>Ceuthorhynchidius albosuturalis</i> Roelofs	= <i>Ceutorhynchus albosuturalis</i> (Roelofs)
Korotyaev (1994)	2	<i>Mogulones koreanus</i> Korotyaev <i>Ceutorhynchus murzini</i> Korotyaev	
Korotyaev (1997a, b)	6	<i>Rhinoncomimus rhytidomoides</i> (Wagner) <i>Rhinoncomimus latipes</i> Korotyaev <i>Rhinoncus koreanus</i> Korotyaev <i>Ceutorhynchus asiaticus</i> Korotyaev <i>Ceutorhynchus dauricus</i> Korotyaev <i>Ceutorhynchus ussuricus</i> Korotyaev	

record on this species has been found from the grape since his report. According to literature (O'Brien and Wibmer, 1982), this species was known to be distributed only in North America, and it seems that the record of the species from Korea might be a misidentification or accidental by the import of grape seedlings at that time.

Haku (1936) issued a paper on the insects of North Keisho-do (Kyongsangbuk-do), including 24 curculionid species with one species of Ceutorhynchinae, *Ceutorrhynchus asper* Roelofs (= *Homorosoma asperum* (Roelofs)) collected in Taegu. After then, Lee and Kim (1974), Kwon and Lee (1986), Morimoto and Lee (1992) and Korotyaev (1982, 1994, 1997a, b) reported 19 species of Korean Ceutorhynchinae as Table 1. Consequently, a total of twenty species belonging to ten genera of the subfamily Ceutorhynchinae have been recognized from Korea.

This study was intended to revise the subfamily Ceutorhynchinae of Korea, based on the specimens which have been collected throughout country.

MATERIAL AND METHODS

Approximately 2,000 specimens of Ceutorhynchinae collected from Korea were examined in this study. Most of them have been collected during the past 5 years by authors and their colleagues in the National Institute of Agricultural Science & Technology (NIAST), Rural Development Administration (RDA). The specimens were also available from various collections as follows: The insect museum of NIAST, RDA; College of Agriculture and Life Sciences, Seoul National University (SNU); Center for Insect Systematics, Kangwon National University (CIS); College of Agriculture, Kyungbuk National University (KNU); College of Agriculture, Andong National University (ANU); and Forestry Research Institute (FRI).

The body length was measured from the anterior margin of pronotum to the apex of elytra excluding rostrum. Terminology adopted in this study was followed after that of Morimoto (1957), Chûjô and Morimoto (1959), and Korotyaev (1994), and modified when the description was needed to be in detail and/or additional explanation.

Type specimens of the new species described in this study were preserved in the insect collection of the National Institute of Agricultural Science & Technology (NIAST), Rural Development Administration (RDA) in Korea.

Abbreviations of geographical name for the province in Korea were indicated as follows; Kyonggi-do (GG), Kangwon-do (GW), Chungchongbuk-do (CB), Chungchongnam-do (CN), Jeollabuk-do (JB), Jeollanam-do (JN), Kyongsangbuk-do (KB), Kyongsangnam-do (KN), Cheju-do (JJ), Hamgyongbuk-do (HB), Hamgyongnam-do (HN), Hwanghae-do (HH), Pyonganbuk-do (PB), Pyongannam-do (PN).

SYSTEMATICS

Subfamily Ceutorhynchinae Thomson, 1859 좁쌀바구미아과

Curculionidae s. fam. *Rhynchaenides* trib. *Ceuthorrhynchina* Thomson, 1859, Skand. Col. I: 138.

Ceuthorhynchidae Brisout, 1860, Rev. et Mag. Zool. (2): 537–539.

Ceuthorhyncides Lacordaire, 1866, Gen. Col. 7: 190.

Ceuthorhynchini Redtenbacher, 1874, Fn. Austr. ed. 3, 1: 130, 137; LeConte, 1876, Proc. Amer. Philos. Soc. 15: 123; Bedel, 1884, Fn. Col. Bassin de la Seine 6: 1882–88: 69; Stierlin, 1891, Fn. Col. Helvet. 2, 1886–98: 208; Seidlitz, 1891, Fn. Balt. ed. 2, 1887–91: 154; Dietz, 1896, Trans. Amer. Ent. Soc. 22: 347; Schultze, 1902, Deutsche Ent. Zeitschr. 205; Everts, 1903, Col. Neerl. 2: 550.

Ceuthorhynchines Lameere, 1900, Man. Fn. Belg. 2: 474.

Ceuthorhynchinae trib. *Ceuthorhynchini* Kuhnt, 1912, Ill. Best.-Tab. Käf. Deutschl. 982.

Ceuthorrhynchini subtrib. *Ceuthorrhynchina* Reitter, 1912(1913), Verh. Nat. Ver. Brünn. 51: 64.

Ceuthorrhynchini Wagner et Schaufuß, 1915, in Calwer, Käferb. ed. 6, 1907–15: 1034.

Ceuthorrhynchinae Dalla Torre et Hustache, 1930, Col. Cal. Pars. 113; Voss, 1958, Decheniana Beihefte 5: 63; Morimoto, 1962, J. Fac. Agri. Kyushu Univ. 12(1): 38, 43.

Ceutorhynchinae O'Brien et Wibmer, 1982, Mem. Amer. Ent. Inst. 34: 169.

Baridinae trib. *Ceutorhynchini* Zherichin et Egorov, 1990, Weevils of the Far East USSR: 114.

Adult. Small, oval and convex. Rostrum short or long. Eyes lateral. Antennae 11 segments with 6- or 7-segment funicle. Pronotum with ocular lobe. Mesepimera strongly ascended to upwards between base of pronotum and elytra, and visible from above. Metasternum contiguous at 1st abdominal segment between hind coxae and metepisternum. Metepisterna with parallel-side. Posterior margins of 2–4 visible segments of abdomen curved posteriorly at the sides. Tibiae unarmed or with a small mucro in each. Corbel of tibiae open. Tarsi 5-segments with small and often invisible 4th segment. Claws often appendiculate.

Larva. Abdominal segments with two or three dorsal folds between segments without plate. Head not caved into pronotum and with entire suture. Frontal sutures extended into membrane of antennal scape and not extended into membrane of mandibular articulation. Antenna with one segment of stuffed bun form. Ocelli with two pairs, one pair located in upper and outer side of antenna, and the other a little high. Anus with 4 lobes on the 10th abdominal segment. The 9th segment not visible in lateral view. Spiracles on pronotum and abdominal segments from 1st to 7th segment, and with two air-sacs.

Key to the tribes of subfamily Ceutorhynchinae in Korea

1. First visible segment of abdomen broader than 2nd segment, not subdivided. Rostrum parallel-sided ...
..... Tribe *Ceutorhynchini*
- First visible segment of abdomen narrower than 2nd segment, subdivided into three parts by coxal cavities. Rostrum tapered towards to the apex. Body globular. Claws bifid, inner branches entirely contiguous to each other Tribe *Orobitini* Genus *Orobitis*

Tribe Ceutorhynchini Redtenbacher, 1874

Ceutorhynchini Redtenbacher, 1874, Fn. Austr. ed. 3, 1: 130, 137.

Key to the genera of tribe Ceutorhynchini in Korea

1. Scutellar lobe of pronotum costate, sharply pointed and strongly produced posteriorly, covering scutellum. Antennal funicle with 6 segments. Claws appendiculate, inner branches fused each other Genus *Mecysmoderes*
- Scutellar lobe of pronotum not produced posteriorly, scutellum exposed 2
2. Rostrum shorter than pronotum, robust, less shorter than 3 times of its width. Antennal funicle with 7-segments. Meso- and metasternum without pectoral canal. Femur with tooth 3
- Rostrum shorter or longer than pronotum, longer than 3 times of its width 4
3. Claws simple. Hind femur 1.5 times as thick as the mid femur Genus *Hypurus*
- Claws appendiculate. Hind femur 1.3 times as thick as the mid femur Genus *Phytobiomorphus*
4. Rostrum wider than fore femur, shorter than 3.2 times of its width. Femur without tooth 5
- Rostrum longer than 3.2 times of its width, if shorter than 3.2 times of its width, femur with tooth 6
5. Antennal funicle with 7 segments Genus *Rhinoncus*
- Antennal funicle with 6 segments Genus *Phytobius* *P. quadricornis* (Gyllenhal)
6. Rostrum wider than fore femur, if narrower than fore femur, intervals without a row of strongly pointed setigerous projections 7
- Rostrum narrower than fore femur, if wider than fore femur, antennal funicle with 7 segments 12
7. Meso- and metasternum with deep pectoral canal. Antennal funicle with 7 segments Genus *Augustinus*
- If meso- and metasternum with pectoral canal, antennal funicle with 6 segments 8
8. Meso- and metasternum without deep pectoral canal. Antennal funicle with 7 segments 9
- At least metasternum with remarkable depression, if depression on mesosternum not deep, antennal funicle with 6 segments 10
9. Rostrum robust, shorter than 3 times of its width Genus *Rhinoncomimus*
- Rostrum slender, longer than 4 times of its width Genus *Homorosoma*
10. Mesosternum weakly depressed, metasternum not depressed. Antennal funicle 6 segments. Base of 8th interval of elytra not enlarged and as width as other intervals Genus *Rutidosoma* *R. weisei* Faust
- Meso- and metasternum more or less depressed, if depression not deep, rostrum narrower than fore femur, antennal funicle with 7 segments 11
11. Odd intervals more convex than even intervals. Antennal funicle with 7 segments Genus *Wagnerinus* *W. costatus* (Hustache)
- Each interval same in height. Antennal funicle with 6 segments Genus *Scleropteroides* *S. hypocrita* (Hustache)

12. Rostrum not narrower than fore femur. Mesosternum with deep pectoral canal Genus *Sinauleutes*
 - Rostrum narrower than femur 13
13. Intervals with a row of pointed setigerous projections. Antennal funicle with 7 segments Genus *Zacladus*
 - Intervals without correct row of pointed setigerous projections 14
14. Basal margin of pronotum and elytra on both sides from scutellum strongly raised and finely dentate. Meso- and metasternum with deep pectoral canal Genus *Cyphosenus*
 - Basal margin of pronotum and elytra not raised on both sides from scutellum and not dentate. Meso- and metasternum with deep pectoral canal, if with pectoral canal, body brown 15
15. Meso- and metasternum with deep pectoral canal Genus *Coeliodes*
 - Meso- and metasternum without pectoral canal 16
16. Body very long. Elytra with about 1.3 times as long as width. Antennal funicle with 6 segments Genus *Tapinotus* *T. sellatus* (Fabricius)
 - Body small and broad 17
17. Fore and mid femur with the angulate tooth. Humuli of elytra reduced Genus *Mogulones*
 - Fore and mid femur without or with general tooth 18
18. Pronotum bell-like, strongly convex, with small sharp tuberculums on convex sides, with narrow continuous medial furrow. Body greenish blue metallic shine. Tibia without mucro in both sexes Genus *Cardipennis*
 - Pronotum less convex, usually with more or less concave sides before tuberculums 19
19. Dorsum of body not clothed with any hairs. Body black, sometimes dark-blue Genus *Nipporhynchus*
 - Dorsum of body clothed with more or less hairs or with densely ovate scales. Antennal funicle with 6 or 7 segments. Claws simple or appendiculate Genus *Ceutorhynchus*

Subtribe *Rhinoncina* Reitter, 1912

Rhinoncides Thomson, 1865, Skand. Col. VII: 231.

Rhinoncidae Schultze, 1902, Deutsche Ent. Zeitschr.: 210.

Rhinoncina Reitter, 1912, Verh. Nat. Ver. Brünn 51: 65, 69.

Rhinoncini Aurivillius, 1924, Svensk. Insekt. 9: 115.

Genus *Phytobius* Schönherr, 1833

Hydaticus Schönherr, 1825, Isis Oken, heft 5, columns 583. Type-species: *Rhynchaenus myriophylli* Gyllenhal.

Phytobius Schönherr, 1833, Gen. Spec. Curc. 1(1): 20. Type-species: *Phytobius myriophylli* Gyllenhal.

Litodactylus Redtenbacher, 1845, Gatt. Deutsch. Käferfn.: 43.

Hydaticus was established with type-species, *Rhynchaenus myriophylli* Gyllenhal, 1813 by Schönherr

(1825). This name was preoccupied by *Hydaticus* Leach (1817), and Schönherr (1833) replaced it with *Phytobius*. Because *Phytobius myriophylli* was a synonym of *Litodactylus leucogaster* (Marsham), *Phytobius* Schönherr often has been cited incorrectly as 1836. But, *Litodactylus* became a junior synonym of *Phytobius* by O'Brien and Wibmer (1982).

***Phytobius quadricornis* (Gyllenhal, 1813) 육절애좁쌀바구미 (신칭)**

(Fig. 1)

Rhynchaenus quadricornis Gyllenhal, 1813, Ins. Suec. 1(3): 154. TL: Europe.

Phytobius quadricornis var. *roelofsi* Hustache, 1916, Ann. Soc. Ent. Fr. 85: 113. TL: Japan; Kobe.

♂: Body black and oval, antennae and leg dark brown, lateral sides of pronotum and underside of abdomen covered with white scales.

Head densely punctured, behind of eyes covered with ovate white scales, other part with hairy white scales; frons between eyes clearly narrower than the base of rostrum; rostrum robust, shorter than pronotum, and broadest on apex; antenna inserted into the apical part of rostrum; scape extended behind anterior margin of eye and longer than the basal 3 funicular segments taken together; funicle with 6 segments, 1st funicular segment with robust, longer than 2nd, 2nd segment longer than 3rd, 3rd to 6th segments same in length, each segment with several long hairs; club spindle shaped, basal segment conical, 2nd segment broad, and longer than the next 2 segments taken together.

Pronotum much wider than long with sharply decreasing the thickness toward the anterior, basal part with deeply punctured, other part weakly punctured wrinkles, basal part before scutellum scattered with ovate white scales, lateral sides with cone shaped projections on the middle, anterior margin with a pair of pyramidal projection.

Scutellum black, small.

Elytra heart shaped, scutellar patch with densely ovate white scales; punctured striae distinct, with a row of dark brown hairs; intervals flattened, with weakly pointed tubercles; each interval with 3–4 rows of dark brown short hairs.

Underside of body weakly concave, covered with ovate white scales; procoxae broadly separated, without bordering keels of prosternal canal; 1st and 2nd abdominal segments 2 times as long as 3rd and 4th segments, 5th segment longer than 4th, weakly depressed in the middle.

Femora slender without tooth; tibia almost straight; corbel fringed with dark brown bristles; inside of apex of mid and hind tibia with mucro; claws appendiculate, inner branches separate.

♀: Abdomen more convex and inside of apex of tibia without mucro.

Length (excl. rostrum): 2.4–2.8 mm.

Material examined. NIAST: GG– 1 ♀, Mt. Yogi, Suwon, 25. VI. 1985, H.K. Ko. SNU: JN– 1 ♀, Chusan, Kwangyang, 23. VI. 1991. KNU: KB– Mt. Hwanghak, 24. VII. 1978; 1 ♀, Mt. Palkong, Taegu, 23. V. 1981; Mt. Juwang, 26. VII. 1984; 2 ♂, 3exs, Mt. Palkong, Taegu, 20. VI. 1985; Mt. Palkong, Taegu, 6. IX. 1985.

Distribution. Korea (new record: Central, South), Japan (Hokkaido, Honshu, Kyushu), Mongolia,

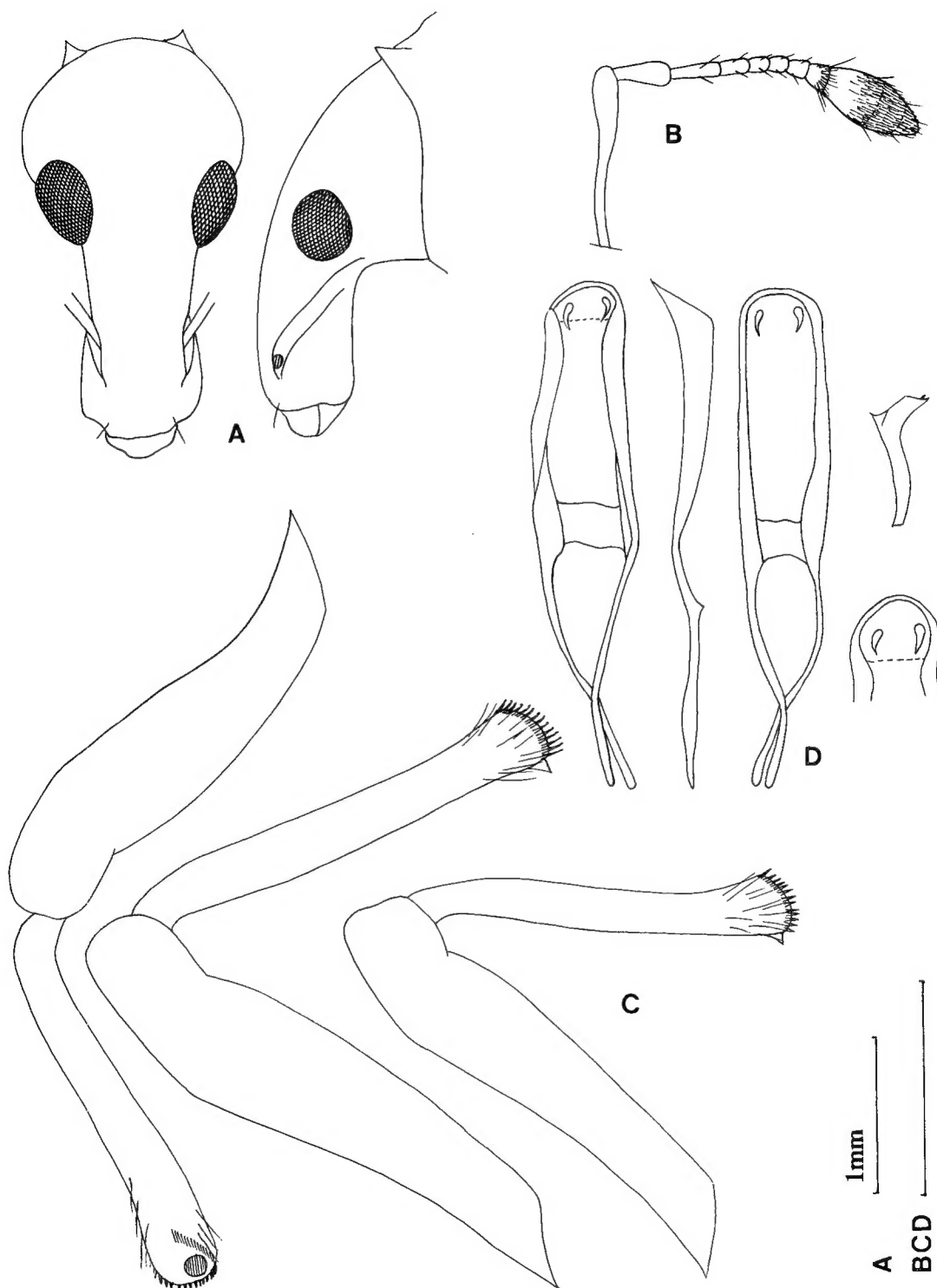


Fig. 1. *Phytobius quadricornis* (Gyllenhal), ♂: A. Head and rostrum; B. Antennae; C. Legs; D. Genitalia.

Russia (Primor'ye), and Europe.

Host plant. *Polygonum* spp. (Hayashi *et al.*, 1994).

Genus *Rhinoncus* Schönherr, 1825

Rhinoncus Schönherr, 1825, Isis Oken, heft 5, column 586.

Mecopeltus Dietz, 1896, Trans. Am. Entomol. Soc. 23: 466.

Paraphytobius Wagner, 1936, Entomol. Bl. 32(5): 181.

Pelenomus Blackwelder, 1939, Fourth supplement 1933 to 1938 (inclusive) to the Leng Catalogue of Coleoptera of America, north of Mexico: 69 [error; not Erichson 1847].

Nemophytobius Voss, 1952, Mitt. Münch. Entomol. Ges. 42(1): 201.

Phytobius O'Brien et Wibmer, 1982, Mem. Amer. Ent. Inst. 34: 176 [not Schönherr 1833].

Rhinoncus Schönherr (1825) has been attributed incorrectly to Stephens (1831). It contains several available names, including *Curculio quadrituberculatus* Fabricius, 1787 as type-species. This species belongs to *Phytobius* of O'Brien et Wibmer (1982) [not Schönherr (1833)], thus *Rhinoncus* is correct name for this genus.

Key to the species of genus *Rhinoncus* in Korea

1. Lateral sides of pronotum with tubercles 2
 - Lateral sides of pronotum without tubercle *R. perpendicularis* (Reich)
2. Intervals of elytra without granulous tubercles *R. jakovlevi* Faust
 - Intervals of elytra with small granulous tubercles 3
3. Shoulders of elytra strong, a little depressed under shoulder 4
 - Shoulders of elytra weak and lines of shoulder rounded *R. koreanus* Korotyaev
4. Body black, legs and apex of elytra reddish-brown. Punctured striae of elytra deep
 - *R. cribricollis* Hustache
 - Body reddish-brown as a whole. Punctured striae of elytra shallow *R. sibiricus* Faust

Rhinoncus cribricollis Hustache, 1916 흰점애좁쌀바구미

Rhinoncus cribricollis Hustache, 1916, Ann. Soc. Ent. Franc. 85: 111. TL: Japan; Yumoto, Tokyo, Kyoto.

Rhinoncus uchidai Kôno, 1935, Ins. Mats. 10: 60. TL: Japan.

Length (excl. rostrum): 2.0–2.2 mm.

Material examined. KNU: GG– 1 ♂, Subong Park, Inchon, 31. VII. 1977, S.M. Lee; GW– 1 ♂, 1 ♀, Mt. Seolak, 9. VIII. 1976.

Previous record. Kwon and Lee (1986): Central, South, Ulreungdo; Morimoto and Lee (1992): Chejudo.

Distribution. Korea (Central, South, Chejudo, Ulreungdo) and Japan (Hokkaido, Honshu, Shikoku, Kyushu).

***Rhinoncus jakovlevi* Faust, 1893 참소리쟁이에좁쌀바구미**

Rhinoncus jakovlevi Faust, 1893, Deutsch. Ent. Zeitschr. 37(2): 205. TL: Siberia.

Rhinoncus pericarpus Roelofs (nec Linnaeus), 1875, Ann. Soc. Ent. Belg. 18: 180. TL: Japan.

Length (excl. rostrum): 3.0–3.4 mm.

Material examined. NIAST: GG- 1 ♂, Mt. Yogi, Suwon, 24. VI. 1985, H.K. Ko; 1 ♂, Mt. Yumyong, Kapyong, 14. VI. 1997, K.J. Hong; 1 ♂, 2 ♀, Kanghwado, 28. V. 1997, K.J. Hong; GW- 2 ♂, Chunchon, 11. V. 1985, S.B. Ahn; 1 ♀, Hongchon, 12. VIII. 1989, K.S. Lee; 1 ♀, Inche, 27. V. 1993, D.S. Ku; 2 ♂, 2 ♀, Jinbu, Pyongchang, 27. V. 1993, D.S. Ku; 1 ♀, Myongju, 27. V. 1993, D.S. Ku; CB- 1 ♀, Jungwon, 23. V. 1993, D.S. Ku; 3 ♀, Jechon, 24. V. 1993, D.S. Ku; 1 ♀, Danyang, 11. V. 1997, K.J. Hong; KB- 2 ♂, 10 ♀, Bonghwa, 28. V. 1993, D.S. Ku. SNU: GG- 2exs, Mt. Kwangkyo, 29. V. 1990. CIS: GW- Chunchon, 16. VI. 1985. KNU: KB- Kyungbuk Univ. Campus, Taegu, 4. IX. 1960; 3exs, Mt. Sobaek, 15. V. 1981; 7exs, Mt. Sobaek, 10. V. 1985.

Previous record. Lee and Kwon (1974): JJ- 4exs, Seogwipo, 9. V. 1974; 2exs, Hakwi, 11. V. 1974; Morimoto and Lee (1992): JJ- 2exs, Seongsan, 19. V. 1990; Oradong, 21. V. 1990.

Distribution. Korea (Central, South, Chejudo), Japan (Hokkaido, Honshu, Shikoku, Kyushu), Russia (Primor'ye, Siberia), and Mongolia.

Host plant. Adults were found on *Rumex acetosa* Linne (Morimoto and Lee, 1992).

***Rhinoncus koreanus* Korotyaev, 1997 한국애좁쌀바구미 (신칭)**

Rhinoncus koreanus Korotyaev, 1997, Entomol. Obozre. 76(2): 382. TL: Korea; Mt. Kumkang.

Length (excl. rostrum): 2.2 mm.

Previous record. Korotyaev (1997): Holotype 1 ♀, Mt. Kumkang, 3–4 km S. of Hotel Kum-kang, netting in grassed, N 363, 12. VII. 1977 (Dely and Draskovits).

Distribution. Korea (Central) and Japan (Nagasaki).

Remarks. The type specimen was preserved in the Hungarian Museum of Natural History.

***Rhinoncus perpendicularis* (Reich, 1797) 마디풀애좁쌀바구미**

Curculio perpendicularis Reich, 1797, Mant. Ins.: 10. TL: Europe, Siberia.

Ceuthorhynchus guttalis Grav., 1807, Vergl. Üb. zool. Syst.: 206.

Rhynchaenus subfasciatus Gyllenhal, 1813, Ins. Suec. 1: 3. TL: Sweden.

Rhinoncus erythrocneme Beck, 1817, Beitr. bayer. Ins.: 22. TL: Allemagne.

Rhinoncus tibialis Stephans, 1831, Ill. Brit. Ent. Mandib. 4: 41. TL: Angleterre.

Rhinoncus guttalis Gyllenhal, 1837, in Schönherr Gen. Sp. Curc. 4(1): 583.

Rhinoncus subfasciatus Gyllenhal, 1837, in Schönherr Gen. Sp. Curc. 4(1): 583.

Rhinoncus tibialis var. *rubricus* Pic, 1896, Miscell. Ent. 4: 41. TL: Sicily.

Rhinoncus tibialis var. *lysholmi* Pic, 1896, Miscell. Ent. 4: 95. TL: Le Caire-Sicily.

Rhinoncus tibialis var. *rufofemoratus* Schultze, 1901, Deutsche Ent. Zeitschr.: 94. TL: Caucase.

Rhinoncus tibialis var. *picipennis* (Rey): Hustache, 1920, Miscell. Rev. Ceuth. Gallo-Rh.: 31.

Length (excl. rostrum): 2.0–2.4 mm.

Material examined. NIAST: GG– 1 ♂, Suwon, 30. V. 1983, Y.I. Lee; 1 ♂, Kwangreung, 20. VI. 1983, I.S. Kim; 1 ♀, Suwon, 1. IX. 1997, D.S. Ku; GW– 1 ♂, Donghae, 28. V. 1993, D.S. Ku; 1 ♀, Hongchon, 25. VII. 1997, K.J. Hong; 1 ♀, Taegwanryong, Pyongchang, 11. VI. 1997, S.B. Ahn; JB– 14 ♂, 17 ♀, Mt. Naejang, 10. VI. 1975, K. R. Choi. KNU: JN– 9exs, Heuksando, 13. VIII. 1981; KB– Mt. Palkong, Taegu, 17. VIII. 1971; Mt. Sobaek, 28. VII. 1976; Taegu, 28. VII. 1980; 5exs, Ansim, Taegu, 25. VIII. 1981; Hayang, Kyongsan, 5. VI. 1982; 9exs, Dansan, Yongpung, 23. V. 1984; Mt. Palkong, Taegu, 6. VI. 1985; Mt. Juwang, 26. VII. 1984; JJ– 2exs, Jungmun, 12. VIII. 1984.

Previous record. Kwon and Lee (1986): Central, South, Chejudo; Morimoto and Lee (1992): JJ– Chonjiyon, 27. VII. 1990.

Distribution. Korea (Central, South, Chejudo), Japan (Honshu, Shikoku, Kyushu), Russia (Primor'ye, Siberia), Mongolia, and Europe.

Host plant. This species lives on *Polygonum* spp. The larva pierces the plant stems eating the parenchyma and pupates in the stems (Caldara and O'Brien, 1995).

***Rhinoncus sibiricus* Faust, 1893 애좁쌀바구미**

Rhinoncus sibiricus Faust, 1893, Deutsch. Ent. Zeitschr. 37(2): 206. TL: Amur.

Rhinoncus sulcipennis Schultze, 1898, Ibid. 42: 233. TL: Japan.

Rhinoncus pyrrhopus Hustache (nec Boheman), 1916, Ann. Soc. Ent. Fr. 85: 110. TL: Japan; Tokyo.

Length (excl. rostrum): 2.2–2.6 mm.

Material examined. NIAST: GG– 1 ♀, Suwon, 27. VI. 1973, Y.I. Lee; 3 ♀, Suwon, 27. IV. 1983, Y.I. Lee; 1 ♂, 1 ♀, Suwon, 12. V. 1983, Y.I. Lee; 3 ♀, Suwon, 30. V. 1983, Y.I. Lee; 1 ♂, Suwon, 18. IV. 1989, S.B. Ahn; 2 ♂, Chongnam, Hwasong, 4. V. 1989, S.B. Ahn; 1 ♀, Suwon, 7. II. 1994, J. Kim; 2 ♂, 1 ♀, Suwon, 21. V. 1997, S.B. Ahn; 2 ♂, Kanghwado, 28. V. 1997, K.J. Hong; GW– 1 ♂, 1 ♀, Hwachon, 25. V. 1993, D.S. Ku; 1 ♂, Donghae, 28. V. 1993, D.S. Ku; CB– 2 ♂, Okchon, 22. V. 1993, D.S. Ku; 1 ♀, Chungwon, 23. V. 1993, D.S. Ku; JB– 2 ♂, 1 ♀, Iri, 10. VIII. 1970; JN– 2 ♀, Keumodo, Yochon, 19. VII. 1993, D.S. Ku; 2 ♂, 1 ♀, Keumodo, Yochon, 4. VIII. 1993, D.S. Ku; KB– 1 ♂, Sangju, 11. V. 1976, K.T. Park; 1 ♀, Andong, 28. V. 1993, D.S. Ku; 1 ♂, 1 ♀, Bonghwa, 28. V. 1993, D.S. Ku; 1 ♀, Keumreung, 11. IX. 1996, S.B. Ahn; 1 ♀, Andong, 28. V. 1997, D.S. Ku; KN– 1 ♀, Samsanmyon, Kosong, 27. VIII. 1993, D.S. Ku; 3 ♂, 1 ♀, Keojedo, 4. VI. 1997, K.J. Hong; 4 ♂, 6 ♀, Jinju, 5. VI. 1997, K.J. Hong; 1 ♀, Jinju, 26. VI. 1997, D.S. Ku; JJ– 1 ♀, Cheju, 27. VI.

1990, S.B. Ahn; 3 ♂, 2 ♀, Daejeong, Namcheju, 18. IX. 1996, S.B. Ahn; 1 ♀, Tokkaebidoro, Cheju, 26. VII. 1997, K.J. Hong; 1 ♀, Namcheju, 26. VII. 1997, K.J. Hong. SNU: GG- Suwon, 25. V. 1981; Suwon, 8. X. 1984; Mt. Yogi, Suwon, 17. V. 1988; Suwon, 23. VI. 1988; Seoul 27. VI. 1988; JN- Mt. Paekun, 22. VI. 1988; 2exs, No data. CIS: GW- Chunchon, 15. VI. 1985. KNU: GW- 2 ♀, Mt. Odae, 30. VII. 1976; 1 ♂, Mt. Seolak, 9. VIII. 1976; 1 ♂, 1 ♀, Mt. Odae, 2. VIII. 1976; 1 ♀, Mt. Obong, 12. VIII. 1976; JN- 1 ♂, 1 ♀, Heuksando, 13. VIII. 1981; 1 ♀, Jindo, 17. VII. 1984; KB- 1 ♀, Mt. Palkong, Taegu, 29. VI. 1979; 1 ♂, Mt. Sambong, 14. VIII. 1997; 1 ♂, Ulreungdo, 26. V. 1981; 1 ♂, Mt. Hwanghak, 24. VII. 1978; 3 ♂, 1 ♀, Ansim, Taegu, 25. VIII. 1971; KN- 1 ♂, Mt. Keumjeong, 1. VI. 1980.

Previous record. Kwon and Lee (1986): Central, South.

Distribution. Korea (Central, South, Chejudo), Japan (Hokkaido, Honshu, Shikoku, Kyushu), China (Shansi), Taiwan, Mongolia, Russia (Amur, Primor'ye), and Mongolia.

Genus *Rhinoncomimus* Wagner, 1940

Rhinoncomimus Wagner, 1940, Ent. Bl. 36: 78/178. Type-species: *Rhinoncomimus klapperichi* Wagner.

Key to the species of genus *Rhinoncomimus* in Korea

1. 3rd tarsal segment more broad. Intervals of elytra less convex *R. latipes* Korotyaev
- 3rd tarsal segment a little broad. Intervals of elytra more convex *R. rhytidomoides* (Wagner)

Rhinoncomimus latipes Korotyaev, 1997 검줄살바구미 (신칭)

Rhinoncomimus latipes Korotyaev, 1997, Zoosyst. Rossica 5: 287. TL: Korea; Pyongyang, Russia; Primor'ye.

Length (excl. rostrum): 2.0–2.2 mm.

Material examined. NIAST: GG- 2 ♀, Hwikyongdong, Seoul, 19. V. 1969, S.S. Song; 1 ♀, Suwon, 2. VII. 1983, D.J. Im; 1 ♂, 1 ♀, Suwon, 19. VIII. 1983, Y.I. Lee; 1 ♂, Suwon, 27. IX. 1983, Y. I. Lee; 1 ♂, Seongnam, 19. V. 1987, S.B. Ahn; 1 ♂, 4 ♀, Suwon, 21. V. 1997, S.B. Ahn; GW- 2 ♂, 1 ♀, Kosong, 25. V. 1993, D.S. Ku; JB- 1 ♂, Iri, 10. VIII. 1970, Y.I. Lee; JN- 1 ♀, Mt. Jiri, 21. VII. 1981, K.S. Woo; KN- 1 ♂, 4 ♀, Jinju, 1. VI. 1993, D.S. Ku; 1 ♂, Mt. Waryong, Samchonpo, 5. VI. 1993, D.S. Ku; 1 ♂, Jinju, 16. VI. 1993, D.S. Ku; 1 ♂, 1 ♀, Jinju, 19. VI. 1993, D.S. Ku; 3 ♂, 1 ♀, Jinju, 14. VII. 1993, D.S. Ku; 1 ♂, 2 ♀, Kosong, 5. VI. 1997, S.B. Ahn; 2 ♂, Jinju, 26. VI. 1997, D. S. Ku; 1 ♀, Keojedo, 4. VI. 1997, A.B. Egorov; 3 ♀, Jinju, 5. VI. 1997, K.J. Hong. SNU: JN- 1 ♂, 1 ♀, Mt. Paekun, Kwangyang, 22. VI. 1988. KNU: GG- Mt. Dobong, 11. VIII. 1977, S.M. Lee; GW- Mt. Odae, 30. VII. 1976; 2exs, Mt. Seolak, 9. VIII. 1976.; 2exs, Mt. Chiak, 22. V. 1982; JB- Mt. Naejang, 14. VIII. 1981; JN- Mt. Mudeung, 26. VII. 1981; KB- Mt. Palkong, Taegu, 18. VI. 1978; Hayang,

Kyongsan, 5. VII. 1980; 2exs, Taegu, 28. VI. 1980; Ansim, Taegu, 29. V. 1980; 6exs, Mt. Palkong, Taegu, 28. V. 1985; Mt. Palkong, Taegu, 2. VI. 1985; Mt. Palkong, Taegu, 6. VI. 1985; Mt. Palkong, Taegu, 18. VI. 1985; KN- 4exs, Mt. Keumjeong, 1. VI. 1980; Mt. Sinbul, 28. V. 1980; Mt. Wonhyo, 30. V. 1980; Mt. Jiri, 14. VII. 1981; Jangan, Yangsan, 16. V. 1989; JJ- Jungmun, 11. VII. 1984.

Previous record. Korotyaev (1997): Paratypes 1 ♂, Tesson, 35 km SW of Pyongyang, waterbasin, No. 343- netting on grasses, 4. VII. 1977 (Dely and Draskovits); 1 ♀, Pyongyang, Tyonsyo vill., 11. VII. 1950 (N.A. Borchsenius).

Distribution. Korea (North, Central, South, Chejudo) and Russia (Primor'ye).

Host plant. *Polygonum thunbergii* Sieb. et Zucc. (Korotyaev, 1994).

Remark. The type specimens were preserved in the Hungarian Museum of Natural History.

***Rhinoncomimus rhytidosomoides* (Wagner, 1944) 골깊은검좁쌀바구미 (신칭)**

Homorosoma rhytidosomoides Wagner, 1944, Entomol. Blätter 40: 100/282. TL: China; Fukien.

Length (excl. rostrum): 2.1–2.3 mm.

Material examined. NIAST: GG- 1 ♂, Mt. Suri, Banwol, 19. V. 1997, J.Y. Choi; GW- 1 ♂, Hoengsong, 24. V. 1993, D.S. Ku; 1 ♀, Hongchon, 11. VI. 1997, S.B. Ahn; CB- 1 ♂, Okchon, 22. V. 1993, D.S. Ku; JB- 4 ♂, 5 ♀, Mt. Naejang, 10. VI. 1975, K.R. Choe; JN- 3 ♀, Piagol, Mt. Jiri, 2. VIII. 1996, K.J. Hong; KB- 1 ♂, 2 ♀, Andong, 28. V. 1997, D.S. Ku. KNU: GW- Mt. Odae, 1. VIII. 1976; 2ex., Mt. Seolak, 9. VIII. 1976; CN- 2exs, Mt. Kyeoiryong, 22. VI. 1980; KB- Mt. Palkong, Taegu, 29. VI. 1979; Mt. Palkong, Taegu, 23. V. 1981; 2exs, Mt. Palkong, Taegu, 28. V. 1985; Mt. Palkong, Taegu, 6. VI. 1985; Mt. Palkong, Taegu, 20. VI. 1985; KN- 2exs, Mt. Keumjeong, 1. VI. 1980.

Previous record. Korotyaev (1997): 1 ♀, Kangwon Prov., Mt. Kumkang, Onjong-ri, 400 m, No. 1341, 22. VI. 1988 (O. Merkl and Gy. Szel).

Distribution. Korea (Central, South) and China (Fukien).

Subtribe Scleropterina Reitter, 1912

Scleropteridae Schultze, 1902, Deutsche Ent. Zeitschr.: 209.

Scleropterina Reitter, 1912, Verh. Nat. Ver. Brünn 51: 64, 65.

Scleroptini Aurivillius, 1924, Svensk. Insekt. 9: 115.

Genus *Homorosoma* Frivaldski, 1893

Homorosoma Frivaldski, 1893, Term. Füzet 16: 87. Type-species: *Ceuthorhynchus valiadirostris* Gyllenhal.

Homoeosoma Schultze, 1902, Deutsche Ent. Zeitschr. (1): 210. [error].

Homeosoma Schultze: Dalla Torre et Hustache, 1930, Col. Cat. Pars 113: 9. [error for *Homoeosoma*].

Key to the species of genus *Homorosoma* in Korea

1. Rostrum a little broadened toward anterior part. Body large *H. asperum* (Roelofs)
 - Rostrum as same width to anterior part. Body small *H. chinense* Wagner

Homorosoma asperum (Roelofs, 1875) 들쭉살바구미

Ceutorhynchus asper Roelofs, 1875, Ann. Soc. Ent. Belg. 18: 177. TL: Japan.

Homorosoma asperum (Roelofs, 1875): Hirashima *et al.*, 1989, A Checklist of Japanese Insects 1: 514.

Length (excl. rostrum): 2.8–3.0 mm.

Material examined. NIAST: GG- 1 ♂, Suwon, 27. IV. 1983, Y.I. Lee; GW- 1 ♂, 1 ♀, Keonbongsa, Kosong, 26. V. 1993, D.S. Ku; JB- 2 ♀, Mt. Naejang, 10. VI. 1975, K.R. Choi; KB- 1 ♂, Andong, 28. V. 1993, D.S. Ku. SNU: GG- 1 ♂, Mt. Kwangkyo, Suwon, 12. V. 1992. KNU: GW- 2exs, Mt. Seolak, 9. VII. 1976; JN- Yosu, 15. IX. 1974; KB- 2exs, Taegu, 25. VIII. 1971; Ansim, Taegu, 25. VIII. 1971; 3exs, Mt. Palkong, Taegu, 28. V. 1985; 2exs, Mt. Palkong, Taegu, 29. V. 1985; Mt. Palkong, Taegu, 6. IX. 1985; 4exs, Mt. Hwanghak, 24. VII. 1978; KN- 5exs, Mt. Keumjong, 1. VI. 1980.

Previous record. Haku (1936): Taegu, IX; Kwon and Lee (1986): Central, South.

Distribution. Korea (Central, South), Japan (Hokkaido, Honshu, Shikoku, Kyushu), China (Kuatun, Fukien, Kwangtseh, Shaowu), and Russia (Primor'ye).

Homorosoma chinense Wagner, 1944 중국쭉살바구미

Homorosoma chinense Wagner, 1944, Ent. Blätt. 40: 100/282, 106/288. TL: China.

Length (excl. rostrum): 2.0–2.2 mm.

Material examined. NIAST: GW- 1 ♂, Naemyon, Hongchon, 11. VI. 1997, S.B. Ahn; KN- 1 ♂, Koam, Changnyong, 19. VI. 1996, K.J. Hong. ANU: KB- 1 ♀, Andong Univ., 22. V. 1996. KNU: GW- Mt. Seolak, 9. VIII. 1976; Mt. Obong, 12. VIII. 1976; CB- Mt. Sobaek, 26. VII. 1976; Mt. Sobaek, 28. XI. 1976; Mt. Wolak, 8. VIII. 1978; JB- Mt. Mai, 11. V. 1980; KB- Kyungbuk Univ. Campus, Taegu, early. VII. 1976; Mt. Palkong, Taegu, 20. VII. 1980; Taegu, 2. X. 1982; Mt. Palkong, Taegu, 28. V. 1985; Mt. Palkong, Taegu, 6. VI. 1985.

Previous record. Kwon and Lee (1986): South; Morimoto and Lee (1992): JJ- Oradong, 18. V. 1990.

Distribution. Korea (Central, South, Chejudo), Japan (Honshu, Kyushu), and China (Kuatun, Kwangtseh, Shaowu).

Host plant. Adults were collected from *Humulus japonicus* Sieb. et Zucc. (Morimoto and Lee, 1992).

Genus *Rutidosoma* Stephens, 1831

Rutidosoma Stephens, 1831, Ill. Brit. Ent. Mandib. 4: 45. TL: Type-species: *Curculio globulus* Herbst, 1795.

Rhytidosomus Schönherr, 1837, Gen. Sp. Curc. 4(1): 594. TL: Type-species: *Rhytidosomus globulus* (Herbst).

Scleropteridius Otto, 1897, Verh. zool.-bot. Ges. Wien. 47: 65. TL: Type-species: *Scleropteridius fallax* Otto.

***Rutidosoma weisei* Faust, 1890 동근어깨좁쌀바구미 (신칭)**

(Fig. 2)

Rutidosoma weisei Faust, 1890, Öfv. Finsk. Vet. Soc. 30: (37), 92. TL: Siberia.

♂: Body black, oval shape.

Head closely punctured, covered with hairy white scales; frons between eyes weakly concave, broader than the base of rostrum; eyes weakly projected; rostrum a little longer than pronotum, apex of rostrum a little broad; antenna inserted into before the middle part of rostrum; scape not reached to the front border of eye, a little longer than the basal 3 funicular segments taken together; funicle 6-segments, 1st segment with robust, a little longer than 2nd segment, 2nd segment shorter than 1st, 3rd segment shorter than 2nd, 4th to 6th segments same in length, each segment with several long hairs; club spindle shape, 4 segments, basal segment conicle, 2nd segment broader and longer than the next two segment taken together.

Pronotum wider than long, rounded in basal part, middle part the broadest, narrowed to anterior, median disc convex, lateral sides with pyramidal projections.

Scutellum very small, black.

Elytra oval form, the 8th interval not broader than the others at the base, humeral tubercles absent; scutellar patch densely covered with ovate yellowish-brown scales; punctured striae distinct with a row of minute hairy brown scales; intervals with a row of setigerous obtuse projections, each projection with one brown scale, subapical swelling absent.

Underside of body concave, covered with ovate pale-brown scales; pectoral canal deep, extend into metasternum without keel; median portion of 1st and 2nd abdominal segments strongly depressed, 1st segment 2 times as long as 2nd segment, 5th segment with projections on the middle.

Femur subparallel-sided, with small spine; tibia slender, basal part of tibia some curved; 1st tarsal segment longer than 2nd; claws appendiculate, inner branches separate.

♀: Median portion of 1st and 2nd abdominal segments not depressed, 5th abdominal segment without any projection and inner side of apex of tibia without mucro.

Length (excl. rostrum): 2.1–2.3 mm.

Material examined. KNU: GW- 1 ♂, Mt. Seolak, 10. VIII. 1976; KN- 2 ♀, Mt. Jiri, 26. V. 1977; 1 ♀, Mt. Jiri, 29. V. 1977.

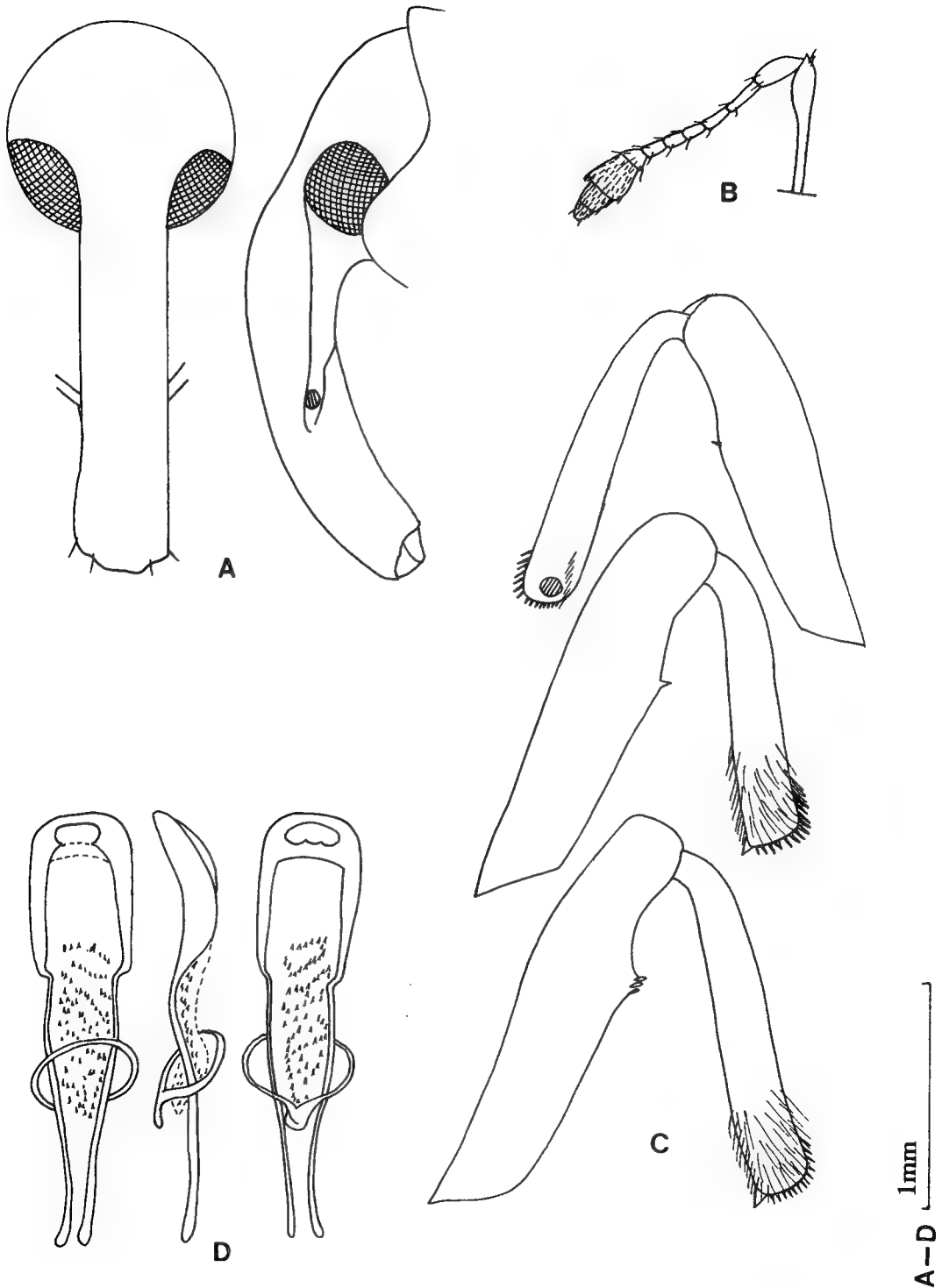


Fig. 2. *Rutidosoma weisei* Faust, ♂: A. Head and rostrum; B. Antennae; C. Legs; D. Genitalia.

Distribution. Korea (new record: Central, South), Japan (Honshu), and Russia (Primor'ye, Siberia).

Genus *Scleropteroides* Colonnelli, 1979

Scleropteroides Colonnelli, 1979, *Fragmenta Entomologica* 15(1): 214. TL: Type-species: *Ceuthorrhynchidius hypocrita* Hustache, 1916.

Scleropteroides hypocrita (Hustache, 1916) 나무딸기좁쌀바구미 (신칭)

(Fig. 3)

Ceuthorrhynchidius hypocrita Hustache, 1916, *Ann. Soc. Ent. Fr.* 85: 126. TL: Japan.

Rhytidosomus holdhausi Wagner, 1944, *Ent. Blätt.* 40(5/6): 97–124.

♂: Body oval form, reddish-black.

Head coarsely reticulated punctures, covered with reddish-black and pale brown scales, posterior part of head with strong median keel. Frons between eyes flat, broader than the base of rostrum. Eyes weakly projected. Rostrum slender, longer than pronotum, apex of rostrum a little broad. Antenna inserted into before the middle part of rostrum. Scape not extends to the front part of eye, more longer than the basal 3 segments of funicle taken together. Funicle 6-segments, the 1st segment of funicle robust, a little longer than the 2nd segment, the 2nd segment a little longer than the 3rd segment, the 4th–6th segments same length, each segment with several long hairs. Club spindle shape, 4 segments, basal segment conical, 2nd segment broader and longer than the next two segments taken together.

Pronotum wider than long, the broadest behind middle part, gradually narrowed to anterior part, with strongly reticulated punctures and without any projection.

Scutellum small, black, covered with yellowish-brown scales.

Elytra egg form, without scutellar spot. Punctured striae distinctly deep. Intervals with a row of tubercles like thorn, each tubercle with one brown scale.

Underside of body convex, covered with pale-brown scales. Pectoral canal deep, extends into metasternum. Abdomen covered with scales and punctures, the 5th segment of abdomen depressed like triangular form in middle part.

Femur elongate, gradually thickened from the base to a little beyond the middle, with a denticular angulation that covered with scales at the base of emargination. Tibia slender, covered with scales gradually widened from the base to the apex in lateral-outer margins. Claws appendiculate.

♀: Abdomen more convex and inner side of apex of tibia without mucro.

Length (excl. rostrum): 2.3–2.9 mm.

Material examined. NIAST: GG– 1 ♂, Suwon, 24. V. 1984, I.S. Kim; 11 ♂, 12 ♀, Mt. Yogi, Suwon, 13. V. 1991, S.H. Lee; 1 ♂, Mt. Yogi, Suwon, 15. V. 1991, S.B. Ahn; 1 ♂, Mt. Yogi, Suwon, 7. V. 1994; 1 ♂, Mt. Yogi, Suwon, 15. V. 1994, J.Y. Choi; 1 ♀, Mt. Kwangkyo, Suwon, 26. IV. 1996, D.S. Ku; 1 ♂, Mt. Yogi, Suwon, 11. IV. 1997, K.J. Hong; 2 ♀, Mt. Yogi, Suwon, 15. IV. 1997, K.J. Hong; 32 ♂, 21 ♀, Mt. Yogi, Suwon, 16. V. 1997, K.J. Hong; 1 ♂, Mt. Yogi, Suwon, 16. V. 1997, A.B.

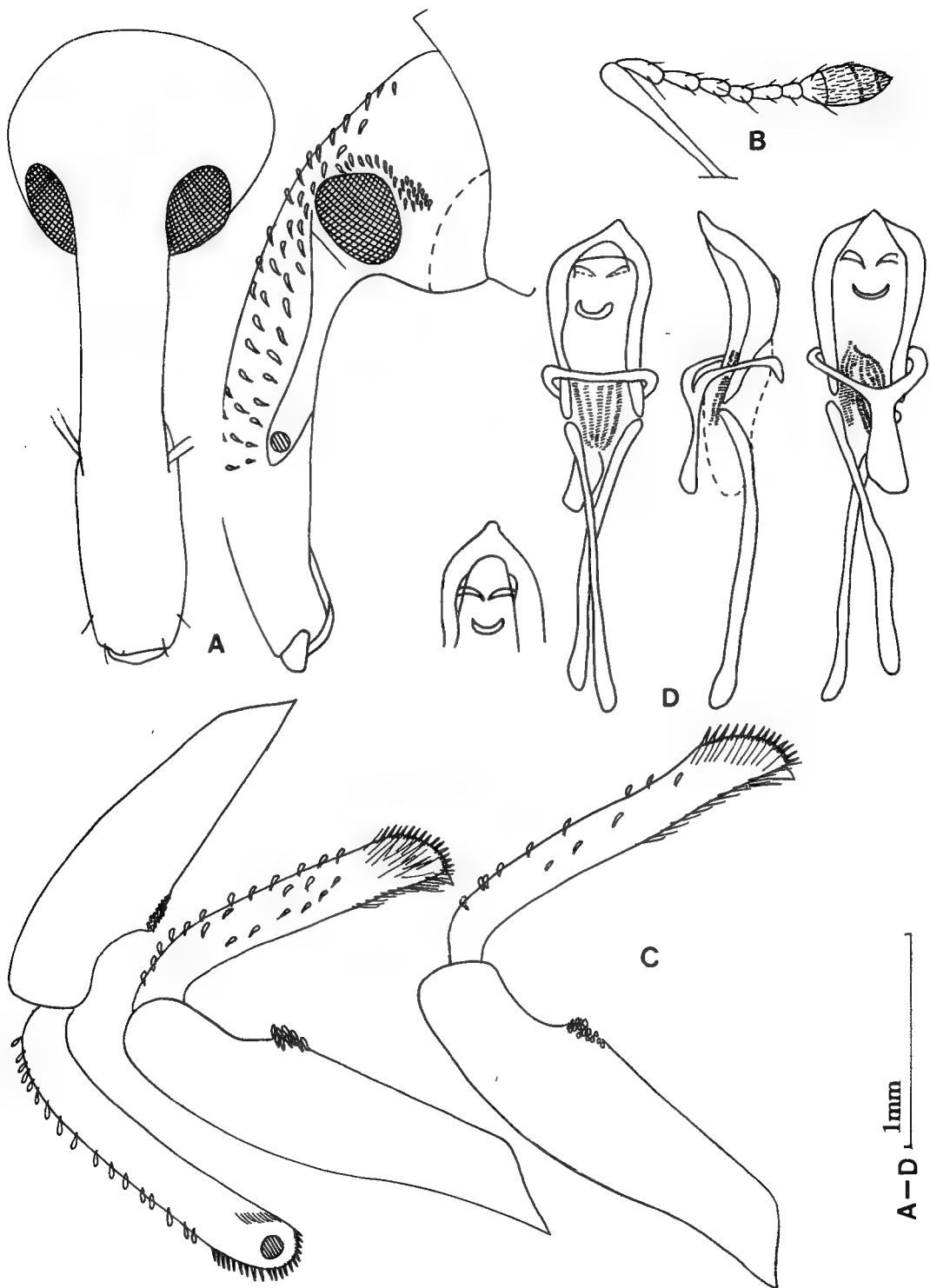


Fig. 3. *Scleropteroides hypocrita* (Hustache), ♂: A. Head and rostrum; B. Antennae; C. Legs; D. Genitalia.

Egorov; 1 ♂, Suwon, 21. V. 1997, S.B. Ahn; 1 ♀, Yongin, 24. V. 1997, K.J. Hong; 12 ♂, 7 ♀, Mt. Yogi, Suwon, 26. V. 1997, K.J. Hong; GW- 1 ♂, Hoengsong, 24. V. 1993, D.S. Ku; 1 ♂, 1 ♀, Chunchon, 25. V. 1993, D.S. Ku; 2 ♂, Hwachon, 25. V. 1993, D.S. Ku; 1 ♂, 3 ♀, Paektamsa, Mt. Seolak, 25. V. 1993, D.S. Ku; 2 ♂, Kosong, 25. V. 1993, D.S. Ku; 1 ♀, Yanggu, 26. V. 1993, D.S. Ku; 1 ♂, 1 ♀, Kosong, 26. V. 1993, D.S. Ku; 1 ♀, Jinbu, Pyongchang, 27. V. 1993, D.S. Ku; 2 ♂, 1 ♀, Inche, 27. V. 1993, D.S. Ku; 1 ♂, 1 ♀, Taebaek, 28. V. 1993, D.S. Ku; CB- 1 ♂, Koesan, 23. V. 1993, D.S. Ku; 1 ♂, Chungwon, 8. V. 1997, K.J. Hong; 5 ♂, 9 ♀, Danyang, 10. V. 1997, K.J. Hong; CN- 1 ♂, Keumsan, 22. V. 1993, D.S. Ku; JN- 1 ♀, Mt. Jiri, 4. viii. 1994, S.B. Ahn; 1 ♂, Nogodan, Mt. Jiri, 3. VIII. 1996, K.J. Hong; KB- 1 ♀, Ulreungdo, 1. VIII. 1977, K.R. Choi; 2 ♂, 3 ♀, Bonghwa, 28. V. 1993, D.S. Ku; 7 ♂, 3 ♀, Heuibangsa, Mt. Sobaek, 9. V. 1997, K.J. Hong; KN- 1 ♀, Munsuam, Kosong, 1. VI. 1993, D.S. Ku; 1 ♂, Jinju, 19. VI. 1993, D.S. Ku; 1 ♀, Jinju, 23. VI. 1993, D.S. Ku; 1 ♂, Keojedo, 4. VI. 1997, K.J. Hong. FRI: KB- 2 ♀, Ulreungdo, 22. V. 1995, H.C. Park. KNU: GG- 2exs, Mt. Soyo, 15. V. 1982; Mt. Myongsong, 16. V. 1982; GW- 2exs, Mt. Chiak, 13. VI. 1976, S.M. Lee; Mt. Odae, 30. VII. 1976; Mt. Odae, 2. VIII. 1976; Mt. Seolak, 9. VIII. 1976; 3exs, Mt. Chiak, 21. V. 1979, S.M. Lee; Mt. Chiak, 22. V. 1982; CB- 4exs, Mt. Sobaek, 15. V. 1981; 2exs, Mt. Sobaek, 10. V. 1985; JB- 4exs, Mt. Mai, 11. V. 1980; Mt. Mai, 11. V. 1984; KB- 3exs, Mt. Juwang, 5. VI. 1979; 3exs, Mt. Sambang, 21. V. 1980, S.M. Lee; 2exs, Mt. Palkong, Taegu, 23. V. 1981; 3exs, Mt. Palkong, Taegu, 26. V. 1985; 2exs, Mt. Palkong, Taegu, 28. V. 1985; 4exs, Mt. Palkong, Taegu, 1. VI. 1985; Mt. Palkong, Taegu, 18. VI. 1985; Mt. Biseul, 28. VI. 1985; KN- 2exs, Mt. Jiri, 27. V. 1976; 3exs, Mt. Jiri, 28. V. 1976; 3exs, Mt. Jiri, 26. V. 1977; Mt. Kaji, 21. V. 1980; Mt. Keumjong, 1. VI. 1980; Mt. Yongchui, 11. V. 1981.

Distribution. Korea (new record: Central, South, Ulreungdo) and Japan (Honshu, Shikoku, Kyushu).

Host plant. The species was collected on *Rubus matsumuranus* var. *concolor* Nakane.

Genus *Zacladus* Reitter, 1912

Zacladus Reitter, 1912, Verh. Nat. Ver. Brünn. 51(1913) [Best.-Tab. 68]: 66.

Allodactylus Weise, 1883, Deutsche Ent. Zeitschr.: 256. [nom. praeocc.] TL: Type-species: *Allodactylus geranii* Paykull.

Key to the species of genus *Zacladus* in Korea

1. Body black without white scale, Each interval with a row of small pointed setigerous projections *Z. fallax* (Boheman)
- Body black, covered with white oval scales. Each interval with a row of setigerous obtuse projections *Z. radula* Hochhuth

Zacladus fallax (Boheman, 1845) 가시줄살바구미

Ceuthorhynchus fallax Boheman, 1845, in Schönherr, Gen. Sp. Curc. 8(2): 142. TL: Crimea.

Zacladus simplicicollis Reitter, 1901, Wien. Ent. Zeit. 20: 86.

Zacladus subopacithorax Pic, 1916, Melang. exot.-ent. 19: 13. TL: Japan; Tokyo.

Length (excl. rostrum): 2.5–2.8 mm.

Material examined. NIAST: JB– 2 ♂, Mt. Naejang, 10. VI. 1975, J.Y. Shim; <JJ> 1 ♂, Mt. Halla, 28. VII. 1985, K.S. Lee; 18 ♂, 13 ♀, Kwaneumsa, Mt. Halla, 27–28. VII. 1997, K.J. Hong. KNU: JJ– Mt. Halla, 23. VII. 1981; Mt. Halla, 7. VIII. 1984; 4exs, Mt. Halla, 5. VIII. 1989; 2exs, Mt. Halla, 7. X. 1990.

Previous record. Morimoto and Lee (1992): JJ– 8exs, Taechon-dong, 28. IX. 1990.

Distribution. Korea (South, Chejudo), Japan (Honshu), Russia (Primor'ye, Kamchaka), and Crimea.

***Zacladus radula* Hochhuth, 1851 날개가시좁쌀바구미 (신칭)**

(Fig. 4)

Zacladus radula Hochhuth, 1851, Bull. Soc. Nat. Moscou 24(1): 95. TL: Siberia.

♂: Body oval form, widest at just behind the humeral area; black, partially clothed with white scales.

Head nearly flat, very coarsely reticulate-punctuate with a weak median keel to vertex, flatted at the frons between eyes; rostrum about as long as pronotum, narrower than the frons between eyes, parallel-sided, gently curved downwardly; antenna yellow-brown, inserted into the middle of rostrum; scape robust, rounded at apex, not reached the front border of eye; funicle 7-segmented, 1st segment with robust, slightly longer than 2nd, 2nd to 4th segments subequal in thickness and length, 4th segment distinctly longer than the 5th, 5th to 6th segments subequal in length; club spindle-shape, pointed at the apex, very finely and closely pubescent.

Pronotum nearly twice as broad as long, rounded at lateral sides, narrowed to anterior, dorsum convex, with a uncertain median sulcus, lateral side with small pyramidal projections.

Scutellum very small.

Elytra broader than the base of pronotum; scutellar patch absent, just behind of scutellum clothed with hairy dark brown scales; punctured striae distinctly deep; intervals strongly carinate, much broader than striae, each interval with a row of setigerous obtuse projections, the base of 8th interval weakly protruded.

Underside of body coarsely covered with white scales. Pro- and mesosternum and anterior of metasternum continuously very broadly and deeply hollowed for the reception of rostrum when in repose; abdomen slightly convex.

Legs elongate; femur gradually thickened from the base to a little beyond the middle, emarginated beyond the underside of the thickest part with a denticular angulation at the base of that emargination, the denticle covered with ovate white scales; tibia slender, inner side of apex of all tibia with mucro; 1st tarsal segment longer than 2nd segment; claws appendiculate, inner branches separate.

♀: Very similar to male, differing as follows; inner side of apex of tibia without mucro.

Length (excl. rostrum): 2.0–2.2 mm.

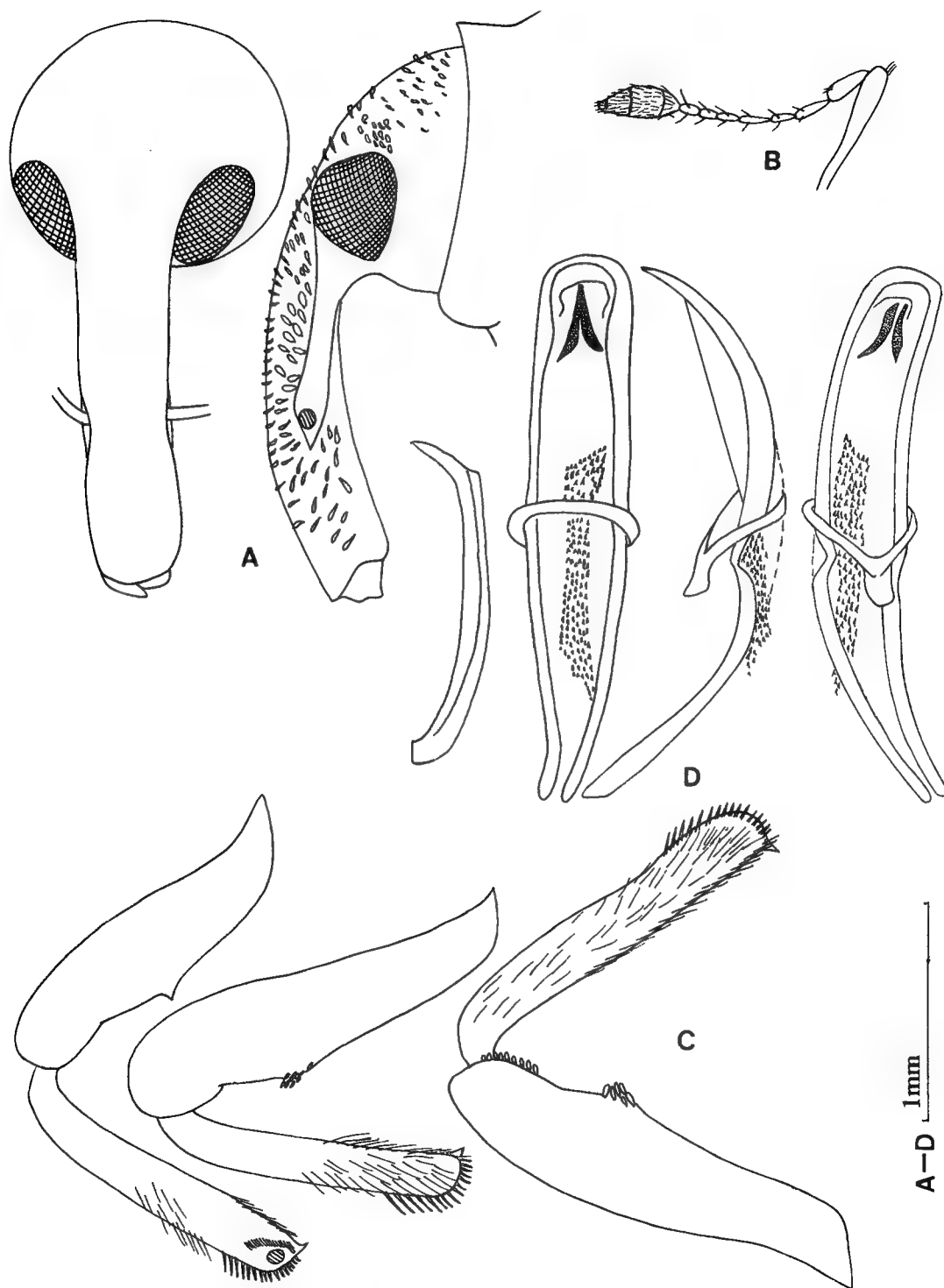


Fig. 4. *Zacladus radula* Hochhuth, ♂: A. Head and rostrum; B. Antennae; C. Legs; D. Genitalia.

Material examined. NIAST: CB- 1 ♂, 1 ♀, Jechon-kun Bongyang-myon, Kuhak-ri, 24. V. 1993, D.S. Ku. KNU: GW- 1 ♂, Mt. Seolak, 9. VIII. 1976; 2 ♀, Mt. Odae, 30. VII. 1976; 1 ♂, Mt. Seolak, 26. VIII. 1974, S. M. Lee; KB- 1 ♀, Mt. Juwang, 26, VII. 1984.

Distribution. Korea (new record: Central, South) and Russia (Siberia).

Genus *Wagnerinus* Korotyaev, 1980

Wagnerinus Korotyaev, 1980, Insects of Mongolia 7: 119. Type-species: *Ceutorhynchus carinulatus* Faust, 1887.

***Wagnerinus costatus* (Hustache, 1916) 홀수볼록좁쌀바구미 (신칭)**

(Fig. 5)

Ceuthorrhynchus costatus Hustache, 1916, Ann. Soc. Ent. Fr. 85: 131, 139. TL: Japan; Mt. Ibuki.

♂: Body black, apical half of rostrum, antennae and legs reddish brown.

Head sparsely with hairy brownish scales, distinctly punctuate, with a median keel to vertex; frons slightly depressed, broad and narrowing to the base of rostrum; rostrum slender, reaching the posterior margin of metasternum, sparsely clothed with hairy brownish scales on basal half and only sparsely with minute scales on apical half, parallel-sided, and weakly curved; antenna inserted into the middle of rostrum; scape longer than basal 3 funicular segments taken together and brown seta at apex; funicle 7 segments, with 1st segment robust, a little longer than 2nd and 3rd, and the other segments much shorter; club spindle shape.

Pronotum rather sparsely clothed with hairy brownish scales and sparsely with ovate brown scales on median line and lateral sides, a little shorter than the broadest width, broadest just before the base, subapical constriction very weak, anterior margin entire.

Scutellum black, pear shape.

Elytra rectangular form, with an scutellar patch on basal of 1st interval, which is composed of contiguous ovate yellow scales, intervals with a row of, partly two rows of brownish truncated scales, longer than wide, broadest just behind shoulders, the sides gently narrowed posteriorly; punctured striae deep, with a row of minute scales same color as in intervals; the odd intervals more convex than the even intervals, each interval carinate, much broader than striae and with a row of setigerous obtuse projections.

Underside of body: sternum more densely clothed than abdomen with oval yellowish white scales; prosternum flat, fore coxae separated as wide as rostrum, mesosternum excavated between middle coxae, metasternum slightly impressed at middle to receive apex of rostrum, 1st abdominal segment slightly depressed on median portion, 5th abdominal segment strongly depressed on median portion.

Legs elongate; femora slender, clothed with hairy brownish scales and with tooth which covered with oval yellow scales on slightly emarginated portion; tibiae scarcely curvate and a little dilated toward apex, clothed with hairy brownish scales, anterior margin of corbel fringed with brownish bristles, inner side of apex of middle and hind tibiae with a triangular mucro; claws appendiculate, inner branches separated

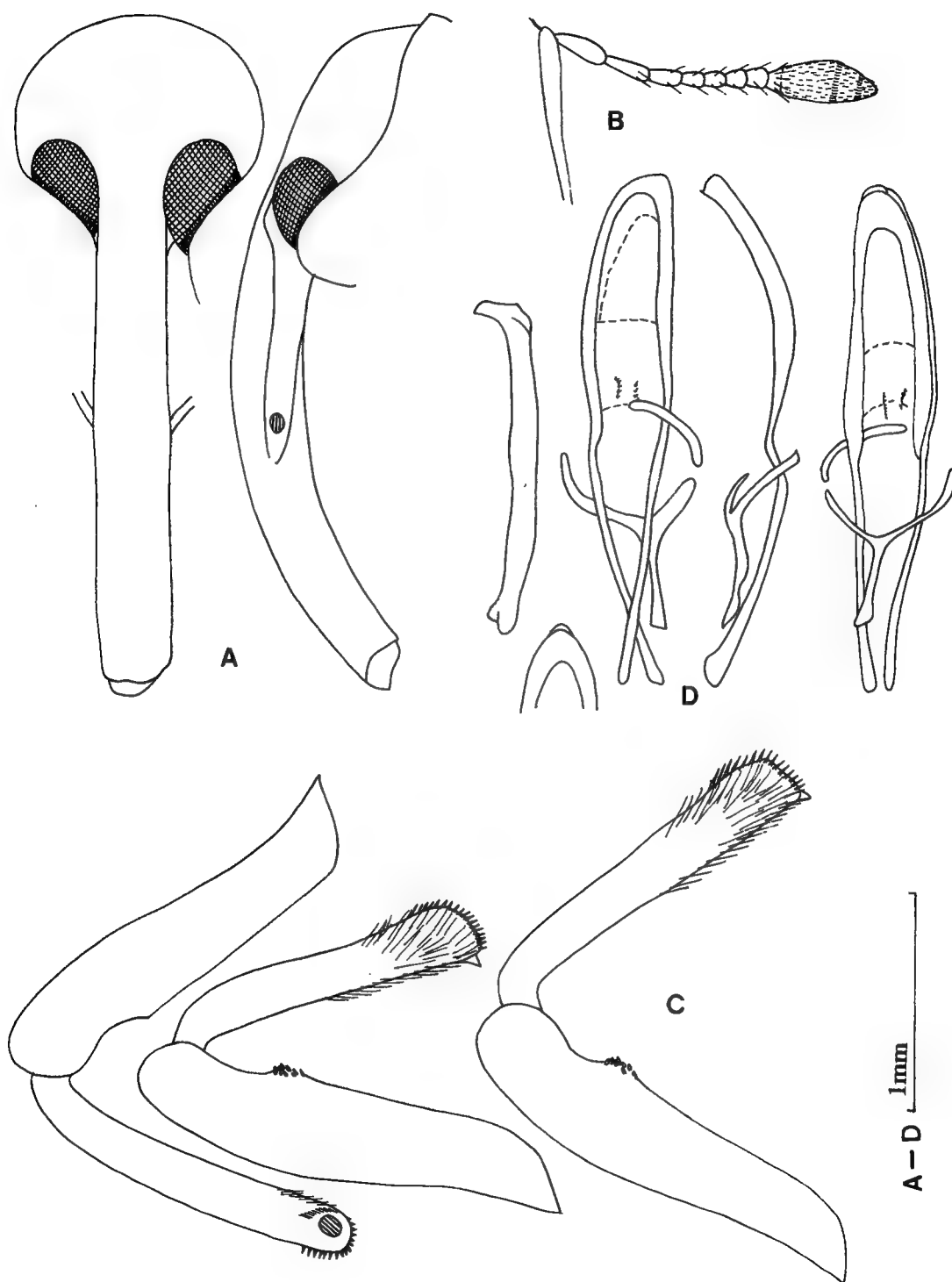


Fig. 5. *Wagnerinus costatus* (Hustache), ♂: A. Head and rostrum; B. Antennae; C. Legs; D. Genitalia.

each other.

♀: Rostrum longer, reaching the middle of 1st abdominal segment; tibia without mucro; 1st abdominal segment nearly flattened on median portion, 5th abdominal segment not depressed on median portion.

Length (excl. rostrum): 2.5–2.7 mm

Material examined. KNU: KB– 1 ♀, Mt. Unmun, 19. V. 1985; KN– 1 ♂, 2 ♀, Mt. Jiri, 27. V. 1976; 2 ♂, 1 ♀, Mt. Jiri, 5. VI. 1983.

Distribution. Korea (new record: South) and Japan (Honshu).

Subtribe Amalina

Genus *Tapinotus* Schönherr, 1826

Tapinotus Schönherr, 1826, Disp. Meth. Curc.: 292. Type-species: *Tapinotus sellatus* (Fabricius, 1794).

***Tapinotus sellatus* (Fabricius, 1794) 큰좁쌀바구미 (신정)**

(Fig. 6)

Attelabus sellatus Fabricius, 1794, Ent. Syst. 4: 454. TL: Europe; Fabricius, 1801, Syst. El. 2: 423.

Cryptorhynchus sellatus: Germar, 1824, Ins. Spec. nov. 1: 221.

Ceuthorhynchus (Tapinotus) sellatus: Bedel, 1885, Fn. Bass. Seine 6: 1882–1888.

Rhynchaenus lysimachiae Olivier, 1807, Ent. 5: 215.

Tapinotus ephippiger Schönherr, 1826, Disp. Meth. Curc.: 293.

♂: Body long rectangle form, parallel-sided, black, coarsely covered with ovate dark brown scales. White broad pattern on median line of pronotum, white round pattern from just behind of scutellum to 5th interval laterally, white band pattern beyond middle of elytra and white pattern on apex of elytra made by ovate white scales.

Head coarsely punctuate, with median keel to vertex, weakly depressed at the frons between eyes; Rostrum about longer than pronotum, base of rostrum narrower than the frons between eyes, slightly widened apically, gently curved downwardly; antenna reddish-brown, inserted into apical one-third of rostrum; scape rounded at apex, not reached the front border of eye; funicle 6-segmented, 1st segment robust, but distinguished shorter than 2nd, 3rd segment shorter than 2nd and 2 times as long as 4th segment, 4th to 6th segments subequal in length; club long spindle-shape, pointed at the apex, very finely and closely pubescent.

Pronotum broader than long, nearly parallel-sided, subapical constriction very weak, anterior margin not sinuate at the middle, dorsum without any projection.

Scutellum small, lanceolate.

Elytra distinctly longer than wide; scutellar patch absent; punctured striae shallow; base of 8th interval with strongly concave.

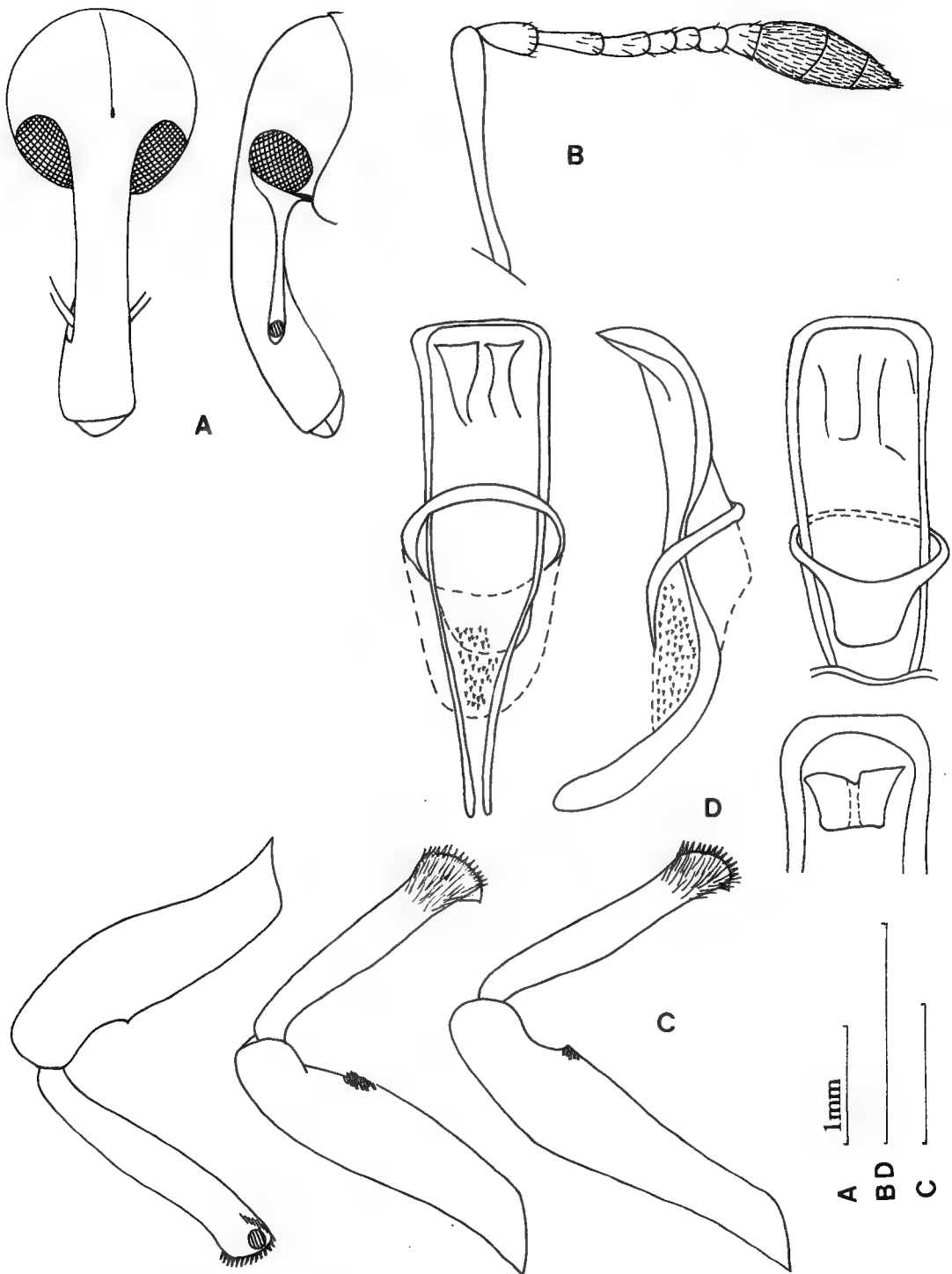


Fig. 6. *Tapinotus sellatus* (Fabricius), ♂: A. Head and rostrum; B. Antennae; C. Legs; D. Genitalia.

Underside of body coarsely covered with ovate white scales; prosternal canal bordered with keels; abdomen slightly concave.

Legs elongate; femur gradually thickened from the base to a little beyond the middle, emarginated beyond the underside of the thickest part with a denticular angulation at the base of that emargination, the denticle covered with ovate white scales; tibia slender, inner side of apex of tibia with mucro. Claws appendiculate, inner branches separate.

♀: Abdomen more convex and inner side of apex of tibia without mucro.

Length (excl. rostrum): 3.2–3.9 mm.

Material examined. NIAST: GW- 2 ♂, 1 ♀, Mt. Odae, Pyongchang, 27. V. 1993, D.S. Ku.

Host plant. This species can be collected in moist and aquatic habitats, and lives on *Lysimachia* spp. The larva pierces the plant stems and eats its parenchyma, making a tunnel and pupating at its extremity (Caldara and O'Brien, 1995).

Distribution. Korea (new record: Central), Russia (Primor'ye, Amur), and Europe.

Remarks. This species is one of the largest ones among Ceutorhynchinae reported in Korea until now. According to Colonnelli (1993), the type specimen of this species, which should be in Fabricius collection of Zoologisk Museum, Copenhagen, by Zimsen (1964), was not found.

ACKNOWLEDGEMENTS

We wish to express our sincere thanks to Dr. B.A. Korotyaev, Zoological Institute, Russian Academy of Sciences, Prof. K. Morimoto, Faculty of Agriculture, Kyushu University, Japan, and Dr. E. Colonnelli, via Nicolo Piccinini, 15, 00176 Roma, Italy for sending many valuable papers and information in reply to our inquiry.

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韓國產 좁쌀바구미亞科 (딱정벌레目: 바구미科)의 分類學的 研究 I. Rhinoncina, Scleropterina 및 Amalina亞族

洪 起 晶 · A.B. Egorov¹⁾ · 權 容 正²⁾

國立植物檢疫所 害蟲調查科

¹⁾러시아科學院 極東生物土壤研究所

²⁾慶北大學校 農科大學 農生物學科

韓國產 바구미科에 속하는 좁쌀바구미亞科의 연구사를 整理하고, Rhinoncina亞族, Scleropterina亞族 및 Amalina亞族을 정리한 결과 16種이 밝혀졌으며, 그 중 육절애좁쌀바구미 (新稱), *Phytobius quadricornis* (Gyllenhal); 둥근어깨좁쌀바구미 (新稱), *Rutidosoma weisei* Faust; 나무딸기좁쌀바구미 (新稱), *Scleropteroides hypocrita* (Hustache); 날개가시좁쌀바구미 (新稱), *Zacladus radula* Hochhuth; 홀수볼록좁쌀바구미 (新稱), *Wagnerinus costatus* (Hustache); 큰좁쌀바구미 (新稱), *Tapinotus sellatus* (Fabricius) 6種을 韓國未記錄種으로 보고하며, 이들에 대한 성충, 생식기의 그림을 제공하였다.

검색어 : 딱정벌레목, 바구미과, 좁쌀바구미아과, 분류, 한국

(Received: January 5, 1999)

(Accepted: April 10, 1999)